THE ROSSI-FOREL SCALE.

I.—Microseismic shock, recorded by a single seismograph, or by seismographs of the same model, but not putting seismographs of different patterns in motion. Reported by experienced observers only.

II.—Shocks recorded by several seismographs of different patterns. Reported by a small number of persons who are at rest.

III.—Shocks reported by persons at rest. Duration or direction noted.

IV.—Shocks reported by persons in motion. Shaking of movable objects, doors and windows, cracking of ceilings.

V.—Shock generally felt by every one; furniture shaken, some bells rung.

VI.—General awakening of sleepers; general ringing of bells; swinging of chandeliers; stopping of clocks; visible swaying of trees; some persons run out of buildings.

VII.—Overturning of loose objects; fall of plaster; striking of church bells; general fright; without damage to buildings.

VIII.—Fall of chimneys; cracks in walls of buildings.

IX.—Partial or total destruction of some buildings.

X.—Great disasters; overturning of rocks; fissures in the surface of the earth; mountain slides.

Earthquakes observed at Carson City, Nev.

Year.	Month and date.	Time, Pacific standard.	Motion.	Intensity, Rossi-Forel scale.	Remarks.
1875	Jan. 24	4.00 a.m.	ne. sw.	.....	One light and one sharp shock.
	Dec. 3	3.00 p.m.	.....	.....	Light.
1877	July 9	11.00 p.m.	n. s.	.....	Do.
1881	Oct. 21	6.41 p.m.	n. s.	.....[1]	Two light shocks.
	Nov. 9	10.08 a.m.	n. s.	.....	Sharp shock, lasting 2 seconds.
1883	July 1	3.00 a.m.	.....	.....	Light.
	Aug. 19	2.55 a.m.	.....	.....	Three light shocks.
1884	April 11	2.10 p.m.	nw. se.	IV	Principally vertical.
1887	June 3	2.48 a.m.	sw. ne.	VIII	Very severe, lasting 6 to 70 seconds, rotary motion preceded by a noise like thunder; stone and brick walls cracked, plaster shaken down, etc.
	June 18	1.20 a.m.	.....	.....	Two light shocks.
1888	Jan. 29	10.45 p.m.	sw. ne.	III	
	April 13	7.33 p.m.	sw. ne.	.....	Light.
	April 28	8.47 p.m.	s. n.	IV	Lasting 5 to 6 seconds.
	May 27	1.50 a.m.	s. n.	.....	Light, followed by quite heavy shock 20 seconds later.
1889	June 19	10.00 p.m.	s. n.	II	Light.
	Oct. 15	4.30 a.m.	e. w.	II	Do.
	Dec. 14	5.30 a.m.	e. w.	II	Do.
1890	April 24	D. N.[1]		I	Light (from seismometer.)
1892	Feb. 23	D. N.[1]		I	Do.
	Mar. 26	{Bet. 7 a.m. and 6 p.m.}	e. w.	.....	Light tremors all day.
	April 19	2.51 a.m.	e. w.	VI	Gentle, but large movement, stopped sideral and meridian time clocks in observatory.
	April 21	9.44 a.m.	e. w.	VI	
	April 21	7.17 p.m.	e. w.	IV	
	April 23	5.30 p.m.	sw. ne.	II	
	April 29	4.08 p.m.	se. nw.	III	
	May 28	D. N.[1]	.....	I	Light (from seismometer.)
	July 6	7.00 a.m.	e. w.	II	Light.
	July 22	6.50 a.m.	se. nw.	II	Do.
1893	Mar. 2	12.05 a.m.	e. w.	II	Do.
	Mar. 2	6.40 a.m.	e. w.	II	Do.
	Mar. 30	D. N.[1]	ne sw.	I	Tremor (from seismometer.)
	Dec. 11	3.10 p.m.	e. w.	I	Do.
1894	Nov. 10	6.55 p m.	e. w.	II	Light.
	Nov. 15	11.07 p.m.	e w.	I	Do.
	Nov. 15	11.25 p.m.	e. w.	II	Do.
	Nov. 15	12 midn't.	e. w.	II	Do.
	Nov. 18	2.38 a.m.	e. w.	I	Tremor (from seismometer.)
	Nov. 18	2.40 a.m.	e. w.	I	Do.
	Nov. 18	2.49 a.m.	e. w.	III	Sharp shock.
	Nov. 18	5.15 a.m.	e. w.	I	Tremor.
	Nov. 18	5.33 a.m.	e. w.	I	Do.
	Nov. 18	7.22 a.m.	e w.	I	Do.
	Nov. 21	D. N.[1]	.....	I	Tremor (from seismometer.)
	Nov. 24	10.03 p.m.	sw. ne.	II	Light.
	Nov. 24	11.22 p.m.	sw. ne.	III	Sharp shock.
	Dec. 4	9.39 p.m.	.....	I	Tremor.
	Dec. 18	9.09 p.m.	sw. ne.	III	Sharp shock.
1896	Jan. 25	4.45 a.m.	e. w.	.....	Light.
	Jan. 25	4.46 a.m.	e. w.	.....	Do.
	Jan. 25	5.02 a.m.	e. w.	.....	Do.
	Jan. 27	7.59 a.m.	s. n.	II	Light, and a number of light tremors.
	Jan. 27	8.34 a.m.	w. e.	III	Do.
	Jan. 27	11.04 a.m.	sw. ne	III	Do.
	Jan. 27	11.19 a.m.	sw. ne.	I	Do.
	Jan. 27	1.01 p.m.	sw. ne.	IV	Do.
	Jan. 27	6.32 p.m.	sw. ne.	II	Do.
	Mar. 19	4.01 a.m.	.....	.....	Light.
	Mar. 20	11.25 p.m.	.....	.....	Do.
1897	May 15	11.05 p.m.	sw. ne.	III	
	May 21	1.50 p.m.	sw. ne.	III	
	June 20	12.15 p.m.	sw. ne.	IV	Stopped four clocks in United States Government building.
	July 5	6.52 p.m.	.....	.....	Tremor.
	July 11	12.15 a.m.	.....	.....	Do.
	Oct. 14	10.30 a.m.	sw. ne.	II	
1898	Mar. 13	7.34 a.m.	sw. ne.	II	
	Mar. 30	11.45 p.m.	sw. ne	IV	

[1] During night.

OBSERVATIONS AT HONOLULU.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, the monthly report of meteorological conditions at Honolulu is now made partly in accordance with the new form, No. 1040, and the arrangement of the columns, therefore, differs from those previously published.

Meteorological observations at Honolulu, February, 1900.

The station is at 21° 18′ N., 157° 50′ W.

Pressure is corrected for temperature and reduced to sea level, and the gravity correction, —0.06, has been applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 12, or Beaufort scale. Two directions of wind, or values of wind force or amounts of cloudiness, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours has always been measured at 10:29 p. m., not 1 p. m., Greenwich time, on the respective dates.

The rain gage, 8 inches in diameter, is 1 foot above ground. Thermometer, 9 feet above ground Ground is 43 feet, and the barometer 50 feet above sea level.

Date.	Pressure at sea level.	Temperature.		During twenty-four hours preceding 1 p.m.. Greenwich time, or 2:29 a. m., Honolulu time.									Total rainfall at 9 a. m., local time.
				Temperature.		Means.		Wind.		Average cloudiness.	Sea-level pressures.		
		Dry bulb.	Wet bulb.	Maximum.	Minimum.	Dew-point.	Relative humidity.	Prevailing direction.	Force.		Maximum.	Minimum.	
	*	†	†			‡	‡		§				
1.....	30.03	68	63	74	64	60.7	69	ne.	5	3	30.09	29.98	0.11
2.....	30.01	70	62	77	67	59.0	64	ne.	4	2	30.08	29.99	0.01
3.....	29.94	62	60	78	68	58.3	60	ne.	4-2	1	30.06	29.97	0.00
4.....	29.85	70	65	78	61	60.3	73	s-sw.	1	0-2	29.98	29.85	0.15
5.....	29.90	65	62	73	63	65.7	87	s-w.	2	10	29.89	29.80	0.53
6.....	29.97	68	64	73	64	61.0	78	nne.	0-4	10	30.05	29.95	0.00
7.....	29.94	70	64.5	73	65	62.0	75	nne.	5-1	8	30.03	29.92	0.07
8.....	29.84	68	65.5	76	66	62.0	73	nne.	3	4-7	29.98	29.84	0.20
9.....	29.82	63	62	77	65	64.0	80	nne.	2-0	6-0	29.85	29.74	0.00
10.....	29.88	63	62	79	62	64.0	81	se.	2	1-3	29.87	29.78	0.00
11.....	29.97	64	56.5	77	62	63.5	82	w-n.	2	7-0	29.97	29.88	0.02
12.....	29.99	56	53.5	74	62	51.7	57	nw-n.	2	1-0	30.02	29.93	0.00
13.....	29.96	58	56	75	55	53.0	66	n-s.	2-0	1-0	30.03	29.90	0.00
14.....	29.96	59	57	75	57	57.7	75	w.	1-0	2-0	30.02	29.90	0.00
15.....	29.99	68	61.5	77	58	58.7	71	s-n.	1	5-0	30.02	29.91	0.00
16.....	30.05	67	58	72	65	56.3	56	nne.	3-6	4-9	30.06	29.97	0.00
17.....	30.05	70	62.5	74	66	54.0	58	ne.	5	4-1	30.09	29.99	0.00
18.....	30.15	72	67	79	66	61.5	67	ne.	4	1	30.16	30.03	0.03
19.....	30.14	64	62	79	71	63.3	70	ne.	3-0	3-1	30.22	30.08	0.00
20.....	30.09	65	61.5	79	62	61.0	72	w-n.	2-0	4	30.18	30.06	0.00
21.....	29 99	64	62	80	60	61.0	69	ne-sw.	2-0	4-2	30.12	29.99	0.00
22.....	30.00	65	62.5	78	62	60.7	70	sw.	1	1-10	30.06	29.94	0.00
23.....	30.09	71	65	82	64	58.3	61	s-se-ne.	1	5-2	30.12	30.02	0.00
24.....	30,07	64	61.5	82	66	62.3	67	nne.	2	2-7-0	30.16	30.02	0.00
25.....	30.01	65	63	80	63	63.5	78	sw-ne.	2-0	1-8	30.09	29.99	0.01
26.....	30.00	71	64.5	80	64	62.3	70	ne.	3	3	30.06	29.95	0.00
27.....	30.02	71	63.5	79	71	60.7	62	ne.	3	3	30.07	29.97	0.00
28.....	30.01	68	62.5	80	67	60.3	64	ne.	3	2-5	30.07	29.97	0.01
Sums..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.14
Means.	29.99	66.2	61.8	77.3	63.9	60.2	70.0	.....	2.3	3.7	30.050	29.938	.....
Departure..	+.04	.....	.....	.....	.....	—2.3	—5.0	.....	.....	—1.2	.....	.....	—4.86

Mean temperature for February, 1900 (6+2+9)+3=70.5°; normal is 70.6°. Mean pressure for January (9+3)+2 is 29.991; normal is 29.949.

*This pressure is as recorded at 1 p. m., Greenwich time. †These temperatures are observed at 6 a. m., local, or 7:29 p. m., Greenwich time. ‡These values are the means of (6+9+2+9)+4. §Beaufort scale.

KITE OBSERVATIONS AT BAYONNE, N. J.

By the Bayonne Kite Club.

The secretary of the Bayonne kite corps, under date of February 19, submits the accompanying table showing the thermometric records and other data accumulated by the corps during the past six months, in continuation of the record published in the MONTHLY WEATHER REVIEW for June, 1899, p. 251. The columns 12 to 15 here given were compiled by the Records Division. The altitudes given in the 5th column show a decided gain in the heights from which records are obtained. In ascension No. 118 the record for 1,000 feet is given hourly beside the record for 2,000 feet made by a second thermometer. This was accomplished by means of the kite line transit carrier car. A record was also kept of the electrical phenomena on the kite wire.

The secretary of the club says:

We are using the American-Malay kite with no alteration except in method of construction, this type being more efficient in our hands than the box kite, and has the advantage of being more portable. During this year the only loss we have sustained has been the breaking away from the main line of one 7-foot kite, and flights have been made under all possible conditions, from the blizzard of February 12, 1899, to the sudden thunderstorms of midsummer.

In order to obtain the greatest possible altitude with the smallest amount of wire, it has been found that tandem lines should be bunched at the top of the main line in what we have termed the "bouquet" system. If kites are placed at intervals along the main line, the head of the line will not attain more than two-thirds the altitude reached by the bouquet system. Thus with 4,500 feet of wire the bouquet system reached an altitude of 2,785 feet.

For some months we have been using a carrier system on our main line. This has been a matter of experiment with us for three years back. By its use, we are now taking records every hour or half hour during ascensions, which is especially interesting for night work. We hope thus to take records from sunset to sunrise. In this carrier system, we first establish one line up to the altitude at which we wish to work; then a second line is sent up with one or two small kites to about 300 feet. This second line is attached to the carrier car, which is placed on the main wire. This car has two grooved wheels resting on the wire and two below that are trollies and are held closely to the wire from the under side, by means of strong elastic bands. Thus the carrier is held to the main wire under all circumstances. The Six's thermometer is then suspended under the car, the trailing line is attached, and the supplemental kites take the car rapidly up the main line with great steadiness. In a wind of 12 miles per hour we can, with one 6-foot towing kite, send a thermometer up 1,000 feet in two minutes and can bring the thermometer back for record in about the same time. This system is far superior to using halyards since much higher altitudes can be attained and there is no depression of the main line. We are using this system for all forms of kite work; thus we take a dozen photographic views while one is being taken by the old system.

For records of temperature we will shortly have in the service a thermograph designed by Mr. H. Norton Lay, of Bayonne, that will give us a continuous record. It may not be so convenient as a Richard, but can be constructed for one-tenth the cost.

Our work is done in a suburban city that is rapidly building up, and large vacant lots are not so easily secured. We are on the end of a peninsula and our kites are as often over water as over land; northerly winds and 5,000 feet of wire let out will place our kites across the Kill Van Kull and over Staten Island.

TABLE 1.—*Kite ascensions made at Bergen Point, Bayonne, N. J., by the Bayonne kite corps.*

Number.	Ascension. Date.	Ascension. P. M. Began.	Ascension. P. M. Ended.	Kite record. Altitude.	Kite record. Temperature. Max.	Kite record. Temperature. Min.	Local conditions. Temperature. Beginning.	Local conditions. Temperature. Ending.	Local conditions. Wind.	Local conditions. Sky.	New York. Temperature. Beginning.	New York. Temperature. Ending.	New York. Winds during ascensions. Direction.	New York. Winds during ascensions. Velocity.	Average daily temperature at the Bergen Point (Bayonne) station.[e] Same day.	Second day.	Third day.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		H. M.	H. M.	Feet.	°	°	°	°			°	°		Miles.	°	°	°
91	July 15, 1899	8 20	9 30	400[a]	73	74	73	73	sw.	Cloudy.	74	73	s.	14	75	79	79
92	July 22, 1899	8 12	9 20	600	73	68	73	71	ne.	Partly cloudy.	74	72	ne.	20	83.5	60.5	66
93	August 12, 1899	8 20	9 30	1,124	71	69	71	68	se.	Cloudy.	73	71	se.	9	73	78.5	70
94	August 19, 1899	8 30	10 00	918	75	74	75	74	ne.	Cloudy.	74	72	e.	4	75.5	78	81.5
95	August 28, 1899	8 15	9 45	750	66	61	66	62	nne.	Clear.	69	69	se.	8	70.5	69	70.5
96	September 7, 1899	8 35	10 00	1,850	65	58	65	60	se.	Clear.	66	65	s.	15	64	74	70
97	September 9, 1899	8 45	10 30	1,580	69	66	69	67	nw.	Clear.	71	70	n.	6	70	65	64
98	September 13, 1899	8 26	9 50	1,652	62	58	62	60	nw.	Clear.	64	63	w.	7	66.5	57.5	58
99	September 14, 1899	9 05	10 15	1,080	56	53	56	54	nw.	Clear.	57	55	nw.	11	57.5	58	60
100	September 15, 1899	8 37	10 16	1,100	59	53	59	56	nw.	Clear.	64	62	e.	8	58	60	63
101	September 16, 1899	8 20	10 30	1,791	58	52	58	55	se.	Partly cloudy.	62	62	s.	9	60	63	65.5
102	September 25, 1899	8 33	9 53	1,005	70	67	70	69	se.	Cloudy.	69	69	se.	25	70	69	54
103	October 4, 1899	8 35	10 12	1,093	56	51	56	54	sw.	Clear.	56	54	sw.	8	52	57	56.5
104	October 7, 1899	8 26	10 16	1,972	53	48	53	50	nw.	Clear.	59	57	ne.	10	56.5	54	55.5
105	October 16, 1899	8 10	9 50	1,350	59	51	59	57	ne.	Cloudy.	62	62	e.	10	60	64.5	72
106	October 25, 1899	8 25	9 45	993	60	57	60	59	sw.	Partly cloudy.	64	63	sw.	8	61	62	64
107	October 28, 1899	9 00	9 15	500	66	65	66	66	ssw.	Cloudy.	64	64	s.	19	62.5	63	53.5
108	November 7, 1899	3 30	4 10	250[a]	55	54	55	55	wsw.	Clear.	52	52	w.	8	45	48.5	51
109	November 14, 1899	8 30	9 30	550[a]	33	30	33	32	ne.	Cloudy (rain).	36	35	ne.	12	35.5	40	49.5
110	November 20, 1899	8 15	9 35	640	40	37	40	39	nw.	Clear.	41	39	nw.	13	47	42.5	47.5
111	November 22, 1899	8 32	9 50	890	52	49	52	50	sw.	Cloudy.	53	53	nw.	13	47.5	45.5	42
112	November 28, 1899	8 12	10 05	2,100	43	36	43	41	sw.	Partly cloudy.	46	45	s.	9	42	45	47.5
113	December 2, 1899	9 40	10 22	450	41	41	41	39	wsw.	Clear.	45	44	w.	8	44.5	47	40.5
114	December 11, 1899	8 35	10 20	1,975	54	48	54	51	w. by n.	Partly cloudy.	54	54	s.	34	50	57.5	47.5
115	December 14, 1899	8 25	9 30	680	40	37	40	39	s.	Partly cloudy.	41	41	e.	12	38.5	39	28.5
116	December 15, 1899	8 40	9 55	575	30	27	30	29	nw.	Clear.	29	27	nw.	30	39	28.5	33.5
117	December 18, 1899	8 15	9 35	734	40	37	40	39	sse.	Cloudy.	44	45	s.	6	40	47	38.5
118	December 19, 1899	7 30	12 15[d]	2,000	41	30	41	36	nw.	Cloudy.	41	37	w.	27	47	38.5	39
a	do	8 00		1,000		37	40				41		w.	22			
b	do	9 00		1,000		35	39				41		w.	31			
c	do	10 00		1,000		35	38				40		nw.	33			
d	do	11 00		1,000		33	38				38		w.	30			
e	do	12 00[c]		1,000		36	36				37		n.	21			
119	December 23, 1899	8 42	10 05	500	45	44	44	44	sse.	Cloudy.	45[f]	45[f]	e.	18	41	50.5	29.5
120	December 27, 1899	8 27	9 55	1,010	26	22	26	24	wsw.	Cloudy (snow).	26	25	w.	13	25.5	25	22.5
a	do	8 45	9 00[b]	500	26	24			wsw.		26	26	nw.	12			
121	December 30, 1899	8 23	10 50	2,097	12	7	12	10	nw.	Clear.	12	12	nw.	16	13	15	21.5

[a] The only ascensions where cord was used; piano wire used for all others. [b] Carrier car used; two thermometers. [c] Midnight. [d] A. M. [e] Mr. Willard W. Hotchkins. [f] Approximated.

The temperatures and winds at New York are furnished by Prof. A. J. Henry from continuous registers by Weather Bureau instruments at elevations of 120 and 360 feet, respectively, above sea level.

NOTES BY THE EDITOR.

CLIMATOLOGY OF ST. KITTS.

In the article on the above subject by Mr. William H. Alexander, published in the MONTHLY WEATHER REVIEW, Annual Summary, 1899, page 583, the mean temperatures and pressures are given without special information as to the hours of observation. In reply to a letter of inquiry from the Editor, Mr. Alexander reports as follows:

Local time was used throughout, but the hours varied. That is, the hours of observation were the same during the year, but were not the same for all the years. To be more specific:

In 1856 the barometer was read at 10 a. m. and the thermometer at 8 a. m., 12 noon, and 4 p. m. In getting the mean barometer the 10 o'clock readings were added and divided by the number of days in the month. The temperature mean was obtained by adding the 8 a. m. and the 4 p. m. readings and dividing the sum by twice the number of days in the month. The noon reading was ignored.

In 1857 the barometer was read at 10 a. m. and the mean obtained as explained above. Only the maximum and minimum temperatures were recorded during this year, and the mean was obtained by dividing by two the sum of the mean maximum and the mean minimum.

From 1858 to 1867, inclusive, the barometer and thermometer were read at the same hours, viz, 8 a. m., 12 noon, and 4 p. m. The means were obtained as explained under 1856 relative to temperature mean.

In 1868 the barometer and thermometer were read at 10 a. m. and 2